

Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS) 2020–2025 Roadside Observational Study

Technical Appendix for Dhaka North Round
Nine

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The Johns Hopkins International Injury Research Unit partnered with the Centre for Injury Prevention and Research, Bangladesh (CIPRB) to conduct roadside observations in Round Nine (September 2025). The methods for these findings were developed by the Johns Hopkins International Injury Research Unit and implemented in collaboration with the CIPRB. This report provides results from observational surveys that represent population-level (citywide) prevalence of an important road safety risk factor, speed, in Round nine. For speed, there were approximately 95,361 observations

Observation sites were selected to obtain a representative sample of vehicles and road users in each city, conditional on the safety of observers. There were 15 observation sites per risk factor, and a standardized protocol was used with vehicles selected for observation in a systematic quasi-random fixed sequence. Observations were performed between 06:30 a.m. and 07:00 p.m. on both weekend days and weekdays. The methods were designed to estimate citywide prevalence and cannot provide insights into interventions conducted in specific locations in the city.

This technical appendix was created on Nov 02, 2025 by the Johns Hopkins International Injury Research Unit using the following files:

- BIGRS3_GAR tech appendix_250616.do
- R9_DhakaNorth_BIGRS3 speed.dta

Table of Contents

1. Speeding

- 1.1. Total number of observed vehicles
- 1.2. Prevalence of exceeding the posted speed limit and summary measures of speed among all vehicles
- 1.3. Histogram of speed among all vehicles
- 1.4. Prevalence of exceeding the posted speed limit and summary measures of speed by vehicle type
- 1.5. Prevalence of exceeding the posted speed limit and summary measures of speed by vehicle type group
- 1.6. Histogram of speed by vehicle type group
- 1.7. Prevalence of exceeding the posted speed limit and summary measures of speed by road type
- 1.8. Prevalence of traveling faster than 30 km/h in collector/local roads and 50 km/h in arterial roads
- 1.9. Histogram of speed by road type
- 1.10. Prevalence of exceeding the posted speed limit by extent of excess and summary measures of speed by speed limit
- 1.11. Prevalence of exceeding the posted speed limit by extent of excess and vehicle type
- 1.12. Prevalence of exceeding the posted speed limit and summary measures of speed by vehicle ownership
- 1.13. Prevalence of exceeding the posted speed limit and summary measures of speed by day of the week
- 1.14. Prevalence of exceeding the posted speed limit and summary measures of speed by weekday/weekend
- 1.15. Prevalence of exceeding the posted speed limit and summary measures of speed by observation session start time
- 1.16. Summary measures of speed among vehicles in free flow speed
- 1.17. Summary measures of speed among vehicles in free flow speed by vehicle type group
- 1.18. Summary measures of speed among vehicles in free flow speed by road type
- 1.19. Summary measures of speed among vehicles in free flow speed by speed limit
- 1.20. Summary measures of speed among vehicles in free flow speed by vehicle ownership
- 1.21. Summary measures of speed among vehicles in free flow speed by day of the week
- 1.22. Summary measures of speed among vehicles in free flow speed by observation session start time
- 1.23. Speed summary per location

1. Speeding

Key findings

- The mean speed among all observed vehicles was 28 km/h.
- Applying speed limits from the Speed Limit Guideline 2024, speeding¹ among all observed vehicles was 25%.
- By vehicle type, speeding was highest among three-wheelers (44%), motorcycles (39%) and pickup/light trucks (24%).
- Speeding was more frequently observed on arterial roads (26%) as compared with collector and local roads (23%).
- Speeding was more frequently observed on weekends (30%) compared with weekdays (22%).

1.1. Total number of observed vehicles

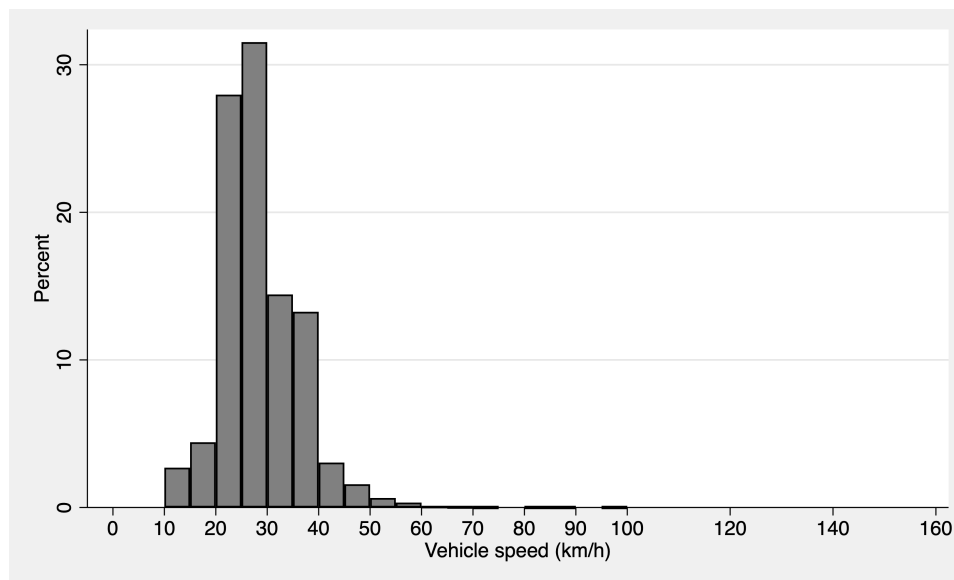
95,361

1.2. Prevalence of exceeding the posted speed limit and summary measures of speed among all vehicles

N	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
94,936	25	28	7	26	36

¹ We applied the maximum proposed speed limits from the Speed Limit Guideline 2024 to all speed related analyses, considering different road and vehicle types.

1.3. Histogram of speed among all vehicles



1.4. Prevalence of exceeding the posted speed limit and summary measures of speed by vehicle type

Vehicle type	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Sedans/Saloons	23,599	5	28	7	27	35
Pickup/Light trucks	4,183	24	26	7	25	33
Buses	6,089	2	26	6	25	32
Minibuses/Minivans	3,595	5	28	7	25	36
SUVs	8,551	10	29	8	26	36
Three-wheelers	21,557	44	28	7	25	36
Motorcycles	27,361	39	28	8	26	36
Other	1	0	21	.	21	21

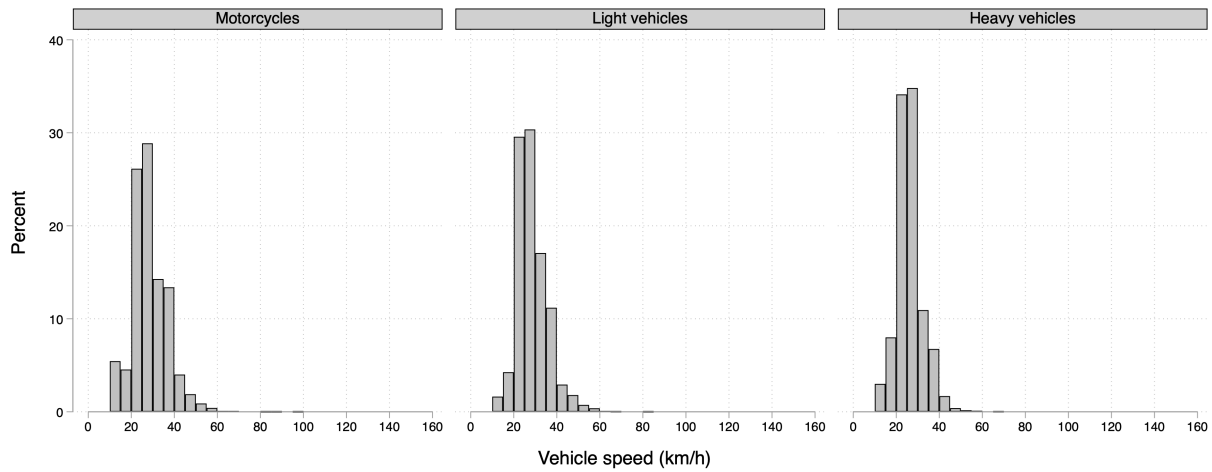
1.5. Prevalence of exceeding the posted speed limit and summary measures of speed by vehicle type group

Vehicle type group	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Motorcycles	27,361	39	28	8	26	36
Light vehicles*	39,928	8	28	7	26	35
Heavy vehicle†	6,089	2	26	6	25	32

* Light vehicles include sedans/saloons/SUVs/4WDs, minibuses/minivans, and pickup/light trucks.

† Heavy vehicles include buses and trucks/large trucks.

1.6. Histogram of speed by vehicle type group



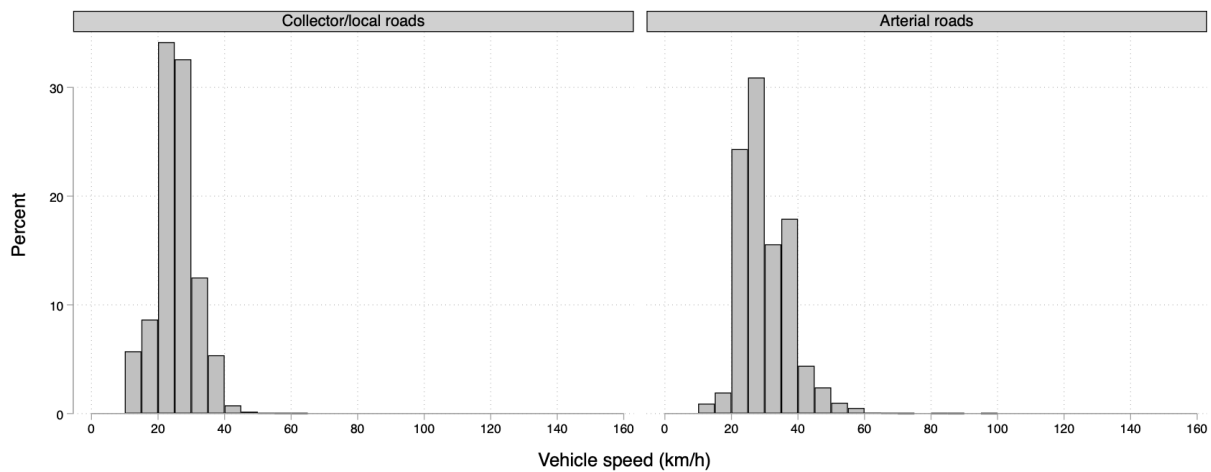
1.7. Prevalence of exceeding the posted speed limit and summary measures of speed by road type

Road type	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Collector/local	34,920	23	25	6	25	31
Arterial	60,016	26	29	7	27	36

1.8. Prevalence of traveling faster than 30 km/h in collector/local roads and 50 km/h in arterial roads

	n	Prevalence (%)
> 30 km/h in collector/local	35,345	16
> 50 km/h in arterial	60,016	1

1.9. Histogram of speed by road type



1.10. Prevalence of exceeding the posted speed limit by extent of excess and summary measures of speed by speed limit

Speed limit (km/h)	n	Prev. of speed > limit (%)	Prev. of speed > limit + 10 km/h (%)	Prev. of speed > limit + 20 km/h (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
20	7,883	65	5	0	21	6	23	26
30	47,684	34	6	1	29	7	26	36
40	39,368	5	1	0	28	7	26	35
999	0	.	0	0	21	6	23	25

1.11. Prevalence of exceeding the posted speed limit by extent of excess and vehicle type

Speed limit (km/h)	n	Prev. of speed > limit (%)	Prev. of speed > limit + 10 km/h (%)	Prev. of speed > limit + 20 km/h (%)
Sedans/Saloons	23,599	5	1	0
Pickup/Light trucks	4,183	24	4	0
Buses	6,089	2	0	0
Minibuses/Minivans	3,595	5	1	0
SUVs	8,551	10	2	0
Three-wheelers	21,557	44	4	1
Motorcycles	27,361	39	8	1
Other	1	0	0	0

1.12. Prevalence of exceeding the posted speed limit and summary measures of speed by vehicle ownership

Vehicle ownership type	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Commercial	34,040	30	27	7	25	35
Taxi	23	4	31	12	27	37
Ride-share	566	35	28	7	27	35
Other	60,307	22	28	8	26	36

1.13. Prevalence of exceeding the posted speed limit and summary measures of speed by day of the week

Day of the week	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Monday	18,235	20	26	6	25	32
Tuesday	14,292	32	29	9	28	39
Wednesday	6,184	33	31	9	28	39
Thursday	11,544	12	27	5	26	32
Friday	14,633	39	32	7	33	38
Saturday	17,369	23	26	6	25	33
Sunday	12,679	17	26	5	25	32

1.14. Prevalence of exceeding the posted speed limit and summary measures of speed by weekday/weekend*

	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Weekday	62,934	22	27	7	25	35
Weekend	32,002	30	29	7	28	36

* The weekend is Friday and Saturday.

1.15. Prevalence of exceeding the posted speed limit and summary measures of speed by observation session start time

Session start time	n	Prevalence (%)	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
6:30 a.m. to 9 a.m.	18,784	25	28	7	27	36
9:01 a.m. to 11 a.m.	18,980	26	28	7	26	36
11:01 a.m. to 2 p.m.	18,774	27	28	7	25	36
2:01 p.m. to 4 p.m.	19,252	25	28	7	25	36
4:01 p.m. to 7 p.m.	19,146	21	27	7	25	34

The following analyses on speeding are restricted to vehicles in free flow speed, which are defined as those traveling faster than the speed limit when/where there is no impedance for drivers to speed freely, such as bad weather, a junction, tight bend, speed bump, stop sign, crosswalk, and law enforcement activities nearby.

1.16. Summary measures of speed among vehicles in free flow speed

n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
10,394	36	7	36	42

1.17. Summary measures of speed among vehicles in free flow speed by vehicle type group

Vehicle type group	n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Motorcycles	9,163	36	7	35	42
Light vehicles*	1,125	37	6	36	44
Heavy vehicle†	106	45	5	43	50

* Light vehicles include sedans/saloons/SUVs/4WDs, minibuses/minivans, and pickup/light trucks.

† Heavy vehicles include buses and trucks/large trucks.

1.18. Summary measures of speed among vehicles in free flow speed by road type

Road type	n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Collector/local	3,139	32	6	32	37
Arterial	7,255	38	6	36	44

1.19. Summary measures of speed among vehicles in free flow speed by speed limit

Speed limit (km/h)	n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
20	1,211	27	5	25	32
30	8,901	37	6	36	42
40	282	45	5	44	50

1.20. Summary measures of speed among vehicles in free flow speed by vehicle ownership

Vehicle ownership type	n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Commercial	1,346	38	6	36	44
Ride-share	114	37	7	36	42
Other	8,934	36	7	35	42

1.21. Summary measures of speed among vehicles in free flow speed by day of the week

Day of the week	n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
Monday	1,635	34	7	33	38
Tuesday	1,750	39	7	38	39
Wednesday	699	40	7	38	46
Thursday	996	35	4	35	49
Friday	2,643	38	5	36	38
Saturday	1,974	34	6	34	43
Sunday	697	32	6	32	39

1.22. Summary measures of speed among vehicles in free flow speed by observation session start time

Session start time	n	Mean (km/h)	Std. dev. (km/h)	Median (km/h)	85th pctl (km/h)
6:30 a.m. to 9 a.m.	2,411	37	6	36	42
9:01 a.m. to 11 a.m.	2,168	36	7	36	42
11:01 a.m. to 2 p.m.	1,935	36	6	35	42
2:01 p.m. to 4 p.m.	2,056	36	6	36	42
4:01 p.m. to 7 p.m.	1,824	35	7	35	42

1.23 Speed summary per location

Location	Latitude	Longitude	n	Speeding	Mean (km/h)	Std. dev. (km/h)	85th pctl (km/h)
247 GM Bari, Satarkul road, Uttar Badda	23.7889654	90.4348336	2447	4	14	3	17
Asad Avenue near St. Joseph school	23.7601004	90.3702959	6485	17	29	5	35
Basila Road in front of Walton showroom	23.7565204	90.3580473	6357	2	25	3	28
Bijoy Shoroni in front of Novo Theatre	23.7645858	90.3871776	7669	80	40	6	47
Gajnabi Road	23.7677645	90.368153	6004	69	25	4	29
Gulshan link road in front of Rangs Babylonia	23.7707779	90.4053052	6802	14	27	5	32
Humayun Road	23.7670295	90.3635456	2966	44	21	3	24
In front of Hakim tower (under foot over-bridges)	23.7779361	90.4257563	7611	6	25	4	28
In front of NICVD	23.7708117	90.3683113	7534	23	30	5	35
In front of Nabisco Biscuit Factory	23.7679105	90.4008689	8355	27	30	6	36
In front of Shyamoli Club	23.7741918	90.3628378	5454	25	30	5	35
Madani Avenue	23.7980141	90.4253405	5632	2	22	4	25
Main road near Satarkul road	23.7890514	90.4250566	7502	18	27	8	36
Main road opposite side of Ibne Sina Hospital	23.7834677	90.4261034	6800	8	25	5	29
Shahjadpur main road (opposite of lavender)	23.7942164	90.4242232	7743	28	31	7	37